

Chapter 2

Earning an Income

In this chapter, you will learn about some of the different ways that income is calculated and paid by employers—or by yourself, if you are self-employed. You will be introduced to some of the deductions that may reduce your pay, including taxes and government and industry benefit programs. You will use some mathematics you are familiar with, such as fractions, percents, and rates, to make calculations in the context of earning an income. You will use these mathematical ideas to

- calculate how much you will earn, given the rate of pay and amount of time worked;
- learn about a range of payment types that vary from employer to employer and industry to industry; and
- calculate deductions and find net pay.

KEY TERMS

These are some terms you will be learning in this chapter:

Are you familiar with any of them?

KEY TERMS

- | | | |
|--------------|-----------------|-------------------|
| • benefits | • minimum wage | • shift premium |
| • bonus | • net pay | • taxable income |
| • commission | • overtime | • tip |
| • contract | • pay statement | • wage |
| • deductions | • piecework | • self-employment |
| • gross pay | • salary | |

2.1

Wages and Salaries

[read together](#)

Have you worked at a job where you have earned money? Did you earn a fixed amount paid hourly or weekly? Many tradespeople and people who work in service industries earn wages calculated this way. Other people earn salaries, which are often expressed as an annual amount but are paid monthly, semi-monthly, or biweekly. What are some occupations where people earn an annual salary?

The total amount people earn is called their **gross pay**. Later in this chapter, you will learn about deductions that are made from gross pay.

There are occasions when people are asked by their employers to work extra hours in addition to their normal hours. What are some situations where employees may be asked to work **overtime**? How much is a reasonable amount to increase the rate of pay for overtime hours?

Please copy the following into your notes:

minimum wage: the minimum amount a worker must be paid an hour; this rate varies, depending on which province or territory you live in

gross pay: the total amount of money earned; also called gross earnings

pay statement: a form an employer gives an employee that shows earnings and deductions from earnings for a defined pay period

Complete Activity 2.1 Pg. 55

Must have complete and passed in for tomorrow. If you decide to do it in pairs, then you need to pass in one copy for the both of you.

Must be done in pencil and questions should be fully answered in sentence form. Show any and all necessary work for full value.

ACTIVITY 2.1 INTERPRETING PAY STATEMENTS

Pg.55

Work in a small group to complete this activity. Your friend Jolie has started a job as an apprentice elevator repairperson. Study her first **pay statement**, which is shown below. Pay statements are provided by the employer.

Employee Name: Jolie			
Company: ABC Elevator Repair		Pay Begin Date: 10/13/2011	
		Pay End Date: 10/19/2011	
General			
Employee ID: 999999	Job Title: Elevator repair apprentice		
Address:	Pay Rate: \$19.00/h		
		Annual:	
Hours and Earnings			
Description	Rate	Hours	Gross Earnings
Regular	19.00/h		\$712.50

-
1. How many days does the pay period cover?
 2. If Jolie's gross earnings are \$712.50, how many hours did she work?
 3. Did she earn more or less than the minimum wage in your province or territory?
 4. Develop a formula Jolie could use to calculate her earnings for any given pay period.

DISCUSS THE IDEAS

TYPES OF EARNINGS

Working with a partner, discuss the following questions:

1. Make a list of the different ways people are paid.
2. What are several different types of jobs that fall into each category of pay?
3. Is there an advantage to being paid weekly rather than monthly? Why do you think most workers are not paid weekly?
4. If you worked at a job in which you earned an annual salary that was paid monthly, and you worked more than 40 hours in a week, how might you be compensated for your overtime work?

Example 1

Each summer, Rick works at a home show in Halifax as a parking lot attendant. His wages this year are \$9.76 an hour and his hours of work vary from week to week. He worked 25 hours for the week August 14–20 and 35 hours for the week August 21–27.

Rick's pay statement is shown below. Check it for accuracy and correct any errors you find.

Employee Name: Rick			
Company: Nova Scotia Spring Ideal Home Show		Pay Begin Date:	14/08/2011
		Pay End Date:	27/08/2011
General			
Employee ID: 999999		Job Title:	Parking lot attendant
Address:		Pay Rate: Annual:	\$9.76/h
Hours and Earnings			
Description	Rate	Hours	Gross Earnings
Regular	\$8.76	60	\$525.60

SOLUTION

His pay rate is shown as \$8.76 when it should be \$9.76. His gross earnings are \$585.60, not \$525.60.

Mental Math and Estimation

How many hours are there in a work week that is made up of five 7.5-hour days? How many hours would that be in a year?

Copy into notes:

semi-monthly: twice a
month

biweekly: every two weeks

Example 2

Amos was hired to be the office clerk at an insurance company. His annual salary will be \$34 756.00.

- a) Why is Amos not paid annually for his work?
- b) Would he earn more each pay period if he were paid **semi-monthly** or **biweekly**?

SOLUTION

a) Being paid annually would create hardship because Amos would have to work an entire year before he was paid. Most people prefer to get regular pay so they can set monthly budgets to meet their expenses and plan for savings.

b) $12 \times 2 = 24$ To find the number of semi-monthly pay periods in a year, multiply the number of months in a year by 2.

$52 \div 2 = 26$ To find the number of biweekly pay periods in a year, divide the number of weeks in a year by 2.

Since the same annual salary will be paid in 26 pay periods for biweekly pay as in 24 pay periods for semi-monthly pay, for each pay period Amos would earn more if he were paid semi-monthly. However, he would get 2 extra paycheques a year if he were paid biweekly.

ALTERNATIVE SOLUTION

To determine whether Amos would earn more each pay period if he were paid semi-monthly or biweekly, you could calculate his semi-monthly and biweekly gross pay.

$\$34\,756.00 \div 24 = \1448.17 Divide the annual salary by 24 pay periods for semi-monthly pay.

$\$34\,756.00 \div 26 = \1336.77 Divide the annual salary by 26 pay periods for biweekly pay.

Amos would earn more each pay period if he were paid semi-monthly.



Example 3

Laura's regular rate at her job in a warehouse is \$9.86 an hour. She works 8 hours a day. She has to work an extra shift on a holiday, and her overtime rate is time and a half.

- a) What are Laura's gross earnings for the holiday?
- b) What is her hourly rate on the holiday?

SOLUTION

- a) First, find Laura's regular daily rate. Why is the answer in dollars?

$$\$9.86/\text{h} \times 8 \text{ h} = \$78.88$$

$$\$78.88 \times 1.5 = \$118.32 \quad \text{Multiply Laura's regular daily rate by "time and a half" or 1.5.}$$

Laura's gross earnings for the holiday are \$118.32.

- b) $\$118.32 \div 8 = \14.79 Divide her holiday gross earnings by the number of hours in a work day.

Laura's hourly rate on the holiday is \$14.79.

ALTERNATIVE SOLUTION

First, solve b) by finding the hourly overtime rate.

$$\$9.86 \times 1.5 = \$14.79$$

Multiply Laura’s regular hourly rate by 1.5.

Then solve a).

$$\$14.79 \times 8 = \$118.32$$

Multiply the hourly overtime rate by the number of hours in a work day.

Laura’s gross earnings for the holiday are \$118.32.

- _____

a) Describe your strategy for determining the number of hours _____
Gregor will work each day and express these amounts as
decimals.

hours
- a) b) How many hours of overtime will he work?
schedule for the upcoming week, shown here.

ie

WEEKLY SCHEDULE			
Employee Name	Day	Start time	End time
Gregor	Sunday		
	Monday	8:00 am	4:00 pm
	Tuesday	8:15 am	4:00 pm
	Wednesday	8:00 am	3:30 pm
	Thursday	8:00 am	4:00 pm
	Friday	9:00 am	4:15 pm
	Saturday	8:30 am	6:30 pm

WEEKLY SCHEDULE				
<i>Employee Name</i>	<i>Day</i>	<i>Start time</i>	<i>End time</i>	<i>Hours worked</i>
Gregor	Sunday			
	Monday	8:00 am	4:00 pm	8.0
	Tuesday	8:15 am	4:00 pm	7.75
	Wednesday	8:00 am	3:30 pm	7.5
	Thursday	8:00 am	4:00 pm	8.0
	Friday	9:00 am	4:15 pm	7.25
	Saturday	8:30 am	6:30 pm	10.0

Next, subtract the start time from 12:00 noon to determine the morning hours, and add the end time to 0 to determine the afternoon hours (because 12:00 noon is 0 hours pm).

You might want to add another column to the table, showing hours worked, as shown in the following table.

- b) Calculate the total number of hours Gregor will work.

$$8.0 + 7.75 + 7.5 + 8.0 + 7.25 + 10.0 = 48.5$$

Then, find the number of overtime hours.

$$48.5 - 37.5 = 11 \quad \text{Subtract normal weekly hours from total hours.}$$

Gregor will work 11 hours of overtime.

To complete:

- finish and pass in activity pg. 55 (due today)
- (whole page)
- finish and show me your answers to Pg.60#1-6 (If you don't show me today, I will be checking tomorrow)
- Begin assignment (due Friday)

It is assumed that there is an average of 4.33 weeks/months

Please take out your homework:

Classwork/Homework

Page 60 # 1-6

1. Rachel works 40 hours a week as a journeyman printer. She earns \$23.68 an hour.

- a) What are her gross weekly earnings? $23.68 \times 40 = \$947.20$ / week
- b) If she works 49 weeks a year and receives 3 weeks of paid holidays, what are her gross annual earnings?

$$52 \text{ weeks} \times 947.20 \\ = \$49,254.40$$

2. What is the difference between biweekly and semi-monthly pay periods?
What advantage does one method have over the other?

biweekly - every 2 weeks
semi-monthly - twice per month

you end up getting 2 more pays

3. Luc earns \$534.12 a month and works 12 hours a week. Explain how you would calculate his hourly pay. (Hint: \$11.13 an hour is not correct.)

~~Average~~
4.33 weeks/month ~ 52 hrs.

$$4.33 \times 12 = 51.96 \text{ hrs/month}$$
$$\frac{\$534.12}{52 \text{ hrs}} = \$10.28/\text{hr}$$

4. You are cutting lawns for your summer job. One customer gives you the option of being paid \$11.00 an hour or a flat fee of \$35.00 each time you cut the lawn. What factors would you take into account in deciding which option to choose?

- how much time it will take
- type of mower
- if you have to pay for your own gas
- size of lawn
- type of lawn

5. If Arielle is paid \$10.20 an hour as a swimming lifeguard and she works 12 hours a week, what is her average monthly wage? If she asked for a raise to \$12.50 an hour, would her monthly earnings increase by more or less than \$100.00?

$$10.20 \times 12 = \$122.40$$

$$\times 4.33 = \$529.99$$

$$12.50 \times 12 = \$150$$

$$\times 4.33 = \$649.50$$

Yes, makes more than \$100.

6. Brandon is paid 150% of his regular hourly rate for overtime hours. He is paid \$45.00 an hour for overtime hours. What is his regular hourly rate?

$$150\% \text{ of } \underline{30} = 45$$

$$\frac{1.50x}{1.50} = \frac{45}{1.50}$$

$$x = \underline{30}$$

Pg 60

#1 40 hrs/week a) \$947.20
\$23.68/hr b) 947.20×52
= \$49254.40

#2 bi-weekly — every 2 weeks
Semi-monthly — twice per month.

#3 4.33 weeks per month (average)
\$534.12/month 12 hrs/week
 $4.33 \times 12 = 51.96 \text{ hrs} \sim 52 \text{ hrs}$
 $\frac{\$534.12}{52 \text{ hrs}} = \$10.28/\text{hr.}$

#4 \$11.00/hr it depends on how many hours you work.
Flat fee of \$35

#5 \$10.20/hr 12 hrs/week
 $10.20 \times 12 = \$122.40/\text{week}$
 $4.33 \times 122.40 = \$529.99/\text{month}$

\$12.50/hr 12 hrs/week
 $12.50 \times 12 = \$150/\text{week}$
 $4.33 \times 150 = \$649.50$ Yes

#6 150% of = 45
 $\frac{1.50x=45}{1.50} \quad x=30 \quad \$30/\text{hr}$

Gr 10 worksheet: Chapter 2 Earning an Income

Day	In	Out	Hours
Monday	8:45 3.25	6:00 6	9.25 hrs
Tuesday	9:00 3	3:15 3.25	6.25 hrs
Wednesday	9:15 2.75	4:00 4	6.75 hrs
Thursday	8:15 3.75	4:30 4.5	8.25 hrs
Friday	9:00 3	5:45 5.75	8.75 hrs

$\frac{15}{60} \quad \frac{1}{4} \quad \frac{25}{100}$

3 hrs 15 mins
 $\neq 3.15 \text{ hrs}$
 $= 3.25 \text{ hr}$

6. Use Kristahl's time card to calculate how many hours she worked this week.

Time card: Kristahl			
Day	In	Out	Hours
Monday	8:15	6:00	
Tuesday	7:00	4:30	
Wednesday	9:15	3:00	
Thursday	8:45	4:15	
Friday	10:00	6:15	

7. Jonas's time card is shown below. If he earns \$8.75/hour, how much did he earn this week?

Time card: Jonas			
Day	In	Out	Hours
Monday	8:45	6:00	
Tuesday	9:00	3:15	
Wednesday	9:15	4:00	
Thursday	8:15	4:30	
Friday	9:00	5:45	

8. Gustav earns a 5% commission on all sales he makes at the car dealership. He sells 4 cars for \$23799.00, \$29748.75, \$17849.25, and \$33318.60. How much does Gustav make on these sales?
9. Rachelle earns a 12% commission on all sales she makes at a clothing store. She also earns \$9.45/hour. If she makes clothing sales of \$27.99, \$34.99, \$20.99, and \$39.19 in a 5.75-hour shift, how much does she make for the day?
10. Gurpreet is a freelance writer. He writes an article for a magazine that pays \$0.45 per word. How long was his article, in words, if he was paid \$402.75?

#13, What is the gross income of the week?